

Notice of Allowability

Application No.

10/614,071

Examiner

Tianjie Chen

Applicant(s)

GILL, HARDAYAL SINGH

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/08/2005.
2. ☒ The allowed claim(s) is/are 1-12, 15-25 and 27-29.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20050926</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dominic M. Kotab on 09/26/2005.

The application has been amended as follows:

- In claim 1, lines 5-6; "an antiparallel (AP) pinned layer structure positioned toward each of the hard bias layers," has been changed to --each of the hard bias layers having an antiparallel (AP) pinned layer structure positioned adjacent--.
- In claim 1, lines 10-11; "an antiferromagnetic layer positioned toward each of the AP pinned layer structures," has been changed to --each of the AP pinned layer structures having an antiferromagnetic layer positioned adjacent--.
- In claim 16, line 6; "an (AP) pinned layer structure positioned toward each of the hard bias layers," has been changed to --each of the hard bias layers having an antiparallel (AP) pinned layer structure positioned adjacent--.
- In claim 16, lines 11-12; "an antiferromagnetic layer positioned toward each of the AP pinned layer structures," has been changed to --each of the AP pinned layer structures having an antiferromagnetic layer positioned adjacent--.
- In Specification p. 12, line 23; "Fig. 8" has been changed to --Fig. 9--.
- In Specification p. 13, line 1; "Fig. 9" has been change to --Fig. 10--.
- In Specification p. 12, before line 22; --Fig. 8 is a Hysteresis loop.-- has been inserted.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:

- With regard to claims 1 and 16, none of prior art on record or a combination thereof renders a magnetic head, including: a sensor having hard bias layers positioned towards opposite track edges of the sensor, the bias layers stabilizing the magnetic moment of free layer; each of the hard bias layers having an antiparallel (AP) pinned layer structure positioned adjacent, each AP pinned layer structure having at least two pinned layers having magnetic moments that are self-pinned antiparallel to each other, each of the AP pinned layer structures stabilizing a magnetic moment of the hard bias layer closest thereto; and each of the AP pinned layer structures having an antiferromagnetic layer positioned adjacent, each antiferromagnetic layer stabilizing a magnetic moment of the pinned layer closest thereto.
- Applicant declares that the structure described in this invention provides an H_c of each of the bias layers of at least two times (Specification, p. 11).


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TIANJIE CHEN
PRIMARY EXAMINER